Section 5:

Teacher Policy Implementation Processes and Impacts

Chapter 10

School-based teacher professional development in East Africa: Emerging lessons from Kenya and Tanzania

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Abstract

This chapter discusses the main challenges facing both governments and the international donor community in the East African region as they implement effective teacher professional development. It reviews the emerging evidence suggesting educational quality is largely obtained by engaging teachers in reviewing their pedagogical processes at the school and classroom levels. It concludes with a discussion of the key priorities for policymakers in Kenya, Tanzania and East Africa more generally as they work towards improving pedagogical practices of both teachers and teacher educators and raising learning outcomes for all children as part of the new post-2015 education agenda.

Keywords: Teacher education reforms, quality education, school-based teacher professional development, pedagogical practices, Kenya, Tanzania, East Africa

The increasing focus on researching classroom processes over the last decade has been in response to the growing realisation that developing the pedagogic practices of teachers is central to improving the quality of education in resource-constrained contexts. Drawing on a range of observation studies from Kenya and Tanzania, the chapter discusses the main challenges facing both governments and the international donor community in the East African region in implementing effective professional development for teachers and reviewing their policy responses. It discusses the emerging evidence of effective teacher development and support from Kenya and Tanzania suggesting that educational quality is largely obtained through engaging teachers in reviewing pedagogical processes in the classroom. It concludes with a discussion of the key priorities for policymakers in Kenya, Tanzania and East Africa more generally as they work towards improving pedagogical practices of both teachers and teacher educators and raising learning outcomes for all children as part of the new post-2015 education agenda.

Challenges Facing Governments in Implementing Effective Teacher Development Programs

The need to ensure that children receive quality teaching and actually learn as a result of their educational experience was highlighted in the 6 Education for All (EFA) goals established in Dakar, Senegal in 2000. It has been a running theme throughout each of the 15 annual EFA Global Monitoring Reports (GMR) and quality is explicitly used in the titles of the 2005 and 2014 reports (UNESCO, 2005; UNESCO, 2014). It points to the need to strengthen access, quality and equity of provision for all children. While significant gains have been made in improving access to education for children in developing countries, new challenges have emerged for making sure all children receive a good quality education.

The 2015 GMR estimated that out of a total world population of 650 million primary age children, 58 million children are out of school and around 100 million do not complete primary school resulting in millions of children leaving without basic skills (UNESCO, 2015). A key question for this chapter will address is how we can improve learning for all children, particularly for the poorest and most marginalised children, through effective teacher professional development and support. In addressing this question, it will be argued that there is a clear link between pedagogy and learning outcomes, and that engaging and training teachers in effective pedagogy, informed by observations of how they teach and pupils learn in the classroom, is central to raising achievement.

Although vast numbers of children are still not learning the basics, some countries like Kenya and Tanzania have been able to get more children into school and ensure that once they are enrolled they learn. They have recognised that teachers are central to improving the quality of education and have been putting in place reforms to teacher education. Such reforms have focused on improving the pedagogical practices of teachers and developing the capacity of teacher educators so as to bridge the theory-practice divide identified in studies of initial education and training and continuing professional development. Such initiatives have brought teachers together in professional learning communities in and beyond the school, informed by external expertise from teacher supervisors and teacher educators, and regular follow-up in the classroom (Hardman et al., 2015; Schweisfurth, 2013).

While classroom pedagogy is being recognised as a key variable for improving learning outcomes in many low-income countries, a major challenge has been the availability and competence of teachers. It is estimated that 27.3 million additional teachers need to be recruited to achieve universal primary education by 2030 and 5.1 million will be needed to achieve universal lower secondary education. Many serving teachers are also unqualified or

under-qualified: in 34 of the 98 countries with data on trained teachers, less than 75% of teachers are trained according to national standards (UNESCO, 2015).

Where teachers have received initial education and training it is judged to be of poor quality. It is found to be largely institution-focused, lecture-based (usually from trainers who lack experience and expertise in primary education) with little in the way of supervised practical teaching, thereby creating a large gap between theory and actual classroom practice (Hardman et al, 2011; Orr et al, 2013; O'Sullivan, 2010). Similarly, the provision of continuing professional development is also judged to be of poor quality with little transferability to the classroom. Where it does exist, it is often found to be ad hoc with little follow-up in the classroom and mainly concentrated in urban areas (Hardman et al., 2012).

The poor quality of teacher education and training often means that rote and recitation approaches to teaching and learning are the norm. Classroom talk in low-income countries is largely found to be teacher-fronted, made up of teacher-led explanation, recitation, cued elicitations, chorus responses and use of chalk/whiteboard. Such narrow pedagogical approaches do not support critical thinking, conceptual learning, or problem-solving and teamwork skills (Alexander, 2008; Ngware et al., 2014).

In response to the identified weaknesses at the initial and in-service stages, many low-income countries have started to overhaul their teacher education systems by moving away from largely college-based provision to a more long-term sustainable vision of continuing professional development that systemically updates the key competencies teachers require in the classroom. International development partners such as DFID, Save the Children, UNICEF, USAID and the World Bank have been assisting governments in many regions of the world to develop national continuing professional development systems for teachers (Save the Children, 2011).

In line with international research, the emphasis has been to bring together initial and continuing professional development to ensure coherence, consistency and quality of training so that all children, including the most marginalised, have access to teachers with minimal competences (Avalos, 2011; Orr et al., 2013; Timperley, 2011). Such trends represent a clear strategic shift away from institutional-based primary teacher education towards more flexible school-based provision. Many ministries of education have also been setting up in-service units with their own budgets to work through a decentralized network of provision at the regional, district and zonal-level in order to monitor and support school-based programmes, and putting in place local support agents to work with headteachers and teachers in the schools (DeStefano, 2011).

Emerging Evidence of Effective Teaching and Learning Practices from Low-Income Countries

Much of the evidence of effective teaching and learning practices comes from high-income countries. For example, Hattie's synthesis of 800 meta-analyses involving over 50,000 studies related to achievement in school-aged children in respect of interactive strategies, such as reciprocal teaching, collaborative group work and peer tutoring encouraging student verbalisation and teacher feedback, shows that high-quality classroom talk enhances understanding, accelerates learning and raises learning outcomes (Hattie, 2009). Such interactive approaches make the learning visible for both teachers and students allowing for the monitoring of learning and formative evaluation.

While much of the evidence on effective teaching and learning processes has come from high-income countries, a substantial body of evidence-based on observation studies from low and middle-income countries is starting to emerge. A recent review commissioned by the UK government's DFID, building on a systematic review of 489 studies and an in-depth study

of 54 empirical studies, concluded that classroom interaction is the pedagogical key (Westbrook et al., 2013). It found that teachers who promoted an interactive pedagogy also demonstrated a positive attitude towards their training and the students, and saw teaching and learning as an interactive, communicative process.

Specific strategies that promoted an interactive pedagogy and visible learning from students were identified. They included providing feedback, sustaining attention and inclusion in the classroom, creating a safe environment in which students felt supported in their learning and drawing on students' backgrounds and experiences. The review identified the following teaching behaviours that were found to be effective in low-income countries: frequent and relevant use of visual aids and locally produced learning materials beyond the use of the textbook; open and closed questioning, expanding responses, encouraging student questioning; demonstration and explanation, drawing on sound pedagogical content knowledge; and, use of local languages.

The review concluded that an interactive pedagogy could have a considerable impact on learning if it was supported by relevant school-based professional development. Such school-based teacher development had to be aligned with teachers' needs, have the support of the headteacher and involve teachers working together at school and cluster level, with follow-up in the classroom involving observation, coaching and feedback. Like the 2010 GMR report focusing on marginalised children, the review acknowledged that educational quality is largely obtained through pedagogical processes in the classroom, and what students achieve is heavily influenced by the knowledge, skills, dispositions and commitment of the teachers in whose care students are entrusted (UNESCO, 2010).

Similarly, in its most recent review of teacher education covering 65 countries from around the world, the OECD argued that much can be learned from high performing countries in terms of offering quality education for their pupils (OECD, 2011). Countries like Finland,

South Korea, Canada and Cuba place a high value on teacher education at the initial stage and through the provision of school-based professional development. In all high-performing education systems, teachers have a central role to play in improving educational outcomes and are also at the centre of the improvement efforts themselves. Such systems are not driven by top-down reforms but by teachers engaging with and leading on reform, taking responsibility as professionals, thereby developing a wider repertoire of pedagogic strategies for use in the classroom (Darling-Hammond et al., 2009).

The OECD study also found that the most effective professional development programmes provide high quality initial and in-service education and training that upgrade teacher pedagogic knowledge and skills over a sustained period of time rather than through disjointed one-off courses. In this way, high performing education systems provide opportunities for teachers to work together on issues of instructional planning, to learn from one another through mentoring or peer coaching, and by conducting research on the outcomes of classroom practices to collectively guide curriculum, assessment and professional learning decisions. The high performing education systems also benefitted from clear and concise profiles of what teachers are expected to know and be able to do at different stages of their careers so as to guide initial and in-service education and training, and create a lifelong learning framework for teachers (Darling-Hammond, 2010). The establishment of such benchmarks to assess progress in professional development over time meant that appraisal and feedback were used in a supportive way to recognise and reward good performance.

There is, therefore, growing recognition of amongst governments and development partners of the need to change underlying pedagogic practices that lead to the transmission of knowledge and rote learning. As will be discussed in the next section, it is increasingly being recognised that field-based models, made up of school-based training supported by distance learning materials, school clusters and follow-up in the classroom, can provide a way of

engaging teachers in their own professional development. Working at the school and classroom level is seen as a way of closing the gap between theory and practice and raising the quality of teaching and learning in basic education for all children (HaBler et al. 2014).

Emerging Lessons from Kenya and Tanzania

The following section reviews the moves towards school-based professional development in Kenya and Tanzania. In both countries, the general thrust has been to bring together ministries, colleges, donor-funded projects, decentralized ministry functions, teacher resource centres and schools to ensure coherence, consistency and quality of training so that all children, particularly girls and the most marginalised, have access to teachers with minimal competences.

Kenya

Kenya recognised the need to develop a national in-service programme to improve pedagogical practices in the late 1990s. It also recognised that professional development programmes need to focus on processes in the school and classroom as necessary levels of intervention for improving the quality of teaching and learning (Hardman et al., 2009). Likewise, it saw the need to link teacher education with headteacher training and community empowerment, including the development of a school-based textbook management system and quality assurance procedures (Crossley et al., 2005).

Support for school-based teacher development was provided through the two complementary projects – Strengthening Primary Education (SPRED) and Primary School Management (PRISM) – funded by DFID. The systems that were developed during this period were to prove critical when Universal Free Primary Education was announced in 2003 by the National Rainbow Coalition. Efforts to cope with the huge surge in enrolment and to

attain the goal of universal primary education by 2015 focussed attention on the scaling up of textbook provision, as well as countrywide in-service training provision. Since 2003, Kenya has managed to significantly increase the proportion of children completing primary school so that more than three-quarters of primary-school-age children make it beyond grade 4, and 70% of children are able to read (Southern and East African Consortium for Monitoring Education Quality [SACMEQ], 2010; UNESCO, 2015).

The Ministry of Education through its in-service training unit ran a national, distance-led teacher education scheme for classroom teachers known as the School-based Teacher Development (SbTD) programme. SbTD was designed to be cost-effective and to combine the benefits of cascaded training at a national, regional and district level with school-based teacher development. The aims of the programme, which ran from 2001 to 2006, were primarily to improve the quality and cost-effectiveness of teaching and learning in primary schools through teachers acquiring new skills that promote active learning and training them in the use of new textbooks (Hardman et al., 2009).

SbTD was developed as a programme of self-study, using paper-based modules with directed activities, combined with regular face-to-face cluster meetings. It successfully graduated over 47,000 primary school teachers throughout Kenya in the three core subjects of English, mathematics and science. This initial focus was important to SbTD's success in rolling out the training. Three teachers from every school, called Key Resource Teachers (KRTs) were trained to lead school-based professional development within their subject area in their schools. The programme was supported by a zonal-based teacher advisory system of over 1,000 teacher advisory centre (TAC) tutors, who were trained to provide group-based support service to the KRTs who were working with the self-study learning materials while carrying a full-time teaching load in the schools. Headteachers also received leadership and

management training materials as part of PRISM so that they could support the KRTs in providing school-based training and support.

Too often, it has proved difficult to assess the impact of interventions due to the lack of baseline data (Riddell, 2008). However, in the case of Kenya, SPRED supported the Kenyan national primary baseline in 1998, which incorporated the SACMEQ survey of the same year, as well as specific studies, including an evaluation on teacher-pupil interaction (Ackers & Hardman, 2001). The classroom interaction baseline was specifically designed to allow for the future measurement of the impact of SbTD. In common with many other east and southern African countries, the baseline suggested classroom pedagogy in many Kenyan primary schools was largely made up of teacher-led explanation, rote and recitation, chorusing of responses by pupils, and use of the chalkboard.

In response to the baseline findings, the SbTD programme recognised that school-based training can help teachers develop more of a dialogic pedagogy to broaden the repertoire of whole-class teaching. In the training modules, dialogue and discussion through, for example, the use of open questions (i.e. allowing for more than one possible answer), probing and building on pupil answers, and peer-to-peer discussion were promoted alongside the more traditional drilling, closed questioning and telling, thereby raising cognitive engagement and understanding. Such an approach was designed to build on the traditional model of whole-class teaching found in many Kenyan classrooms, but avoid the simplistic polarization of pedagogy into ‘teacher-centred’ versus ‘child-centred’ that has characterised much educational discourse in the international donor community (Schweisfurth, 2013; Vavrus, 2009). It was also designed to help ensure there was a better balance and blending of local socio-cultural practices with internationally informed reforms to teacher education, particularly with regard to adult-child relationships (Crossley, 2009).

Building on the baseline study, follow-up evaluations using systematic observation and stakeholder interviews were conducted in 2005 and 2006 to investigate the impact of SbTD and the training of teachers in the use of textbooks (Hardman et al., 2009). While the 1999 national primary baseline on classroom interaction found an overwhelming level of directive teaching and rote learning going on in the teaching of primary English, mathematics and science, characteristic of many classrooms in the region, the follow-up evaluations suggested that there had been major changes in pedagogic practices in Kenyan primary schools. For examples, 34% of teachers in the 2005 sample used paired/group work in their lessons compared to only 3% in 1999.

The findings also showed that a greater range of organisational arrangements were being deployed by teachers to meet different educational goals: in the 1999 national primary baseline, most classrooms (97%) were organised using a traditional classroom layout (i.e. desks organised in rows); this compared to 42% of classrooms in the 2005 evaluation using an alternative classroom layout where pupils reorganised the classroom to accommodate paired or group work to promote peer-to-peer interaction and exploration of ideas. Textbooks were also far more in evidence compared to the national primary baseline with an average pupil/textbook ratio of 2:1 at grade 6 and 3:1 at grade 3.

Another premise for change that was addressed was the role of the headteacher, which was seen to go beyond the traditional role of administrator to include the leading of pedagogic change and providing feedback to teachers about their classroom performance and supporting teacher professional development (Crossley et al., 2005). The practice of having KRTs and headteachers collaborate with other educational professionals, such as inspectors and teacher centre advisers, to examine what is taking place in classroom and schools, and provide constructive and non-directive feedback, was also identified as an achievement by the study. In addition, the practice of distributing training allowances directly to the KRTs

through a school bank account who in turn would pay the TAC tutors so as to participate in the training was judged to have been a success: it increased resources, incentives and accountability at the local level as tutors were informally monitored in their effectiveness in programme delivery and record keeping.

However, findings from the evaluations suggested that the 'cascade' model of school-based training, whereby KRTs work with other colleagues in the school to pass on their training, was having less impact than had been anticipated by the programme's designers. It was found that 62% of KRTs used some form of peer interaction in their lesson, compared to 17% of the non-KRTs. A similar picture emerged with the use of open-ended questions: KRTs were twice more likely to ask an open question: 11% of the questions asked by KRT teachers were open compared to 5% asked by non-KRTs. The main reason given for the lack of effectiveness of the KRT in leading school-based training was the heavy workload of all teachers, which left little time for systematic input. This suggested the need for all teachers to undergo in-service training with official time being set aside for school-based training, and for KRTs to be given time to observe, coach and provide feedback to their colleagues. The success of the expansion and sustainability of the SbTD programme is still evident in Kenya today with a greater emphasis on the teaching of literacy, numeracy and science (Akyeampong et al., 2012).

Similarly, from 1998 until 2013, the Japanese International Cooperation Agency (JICA) supported the Kenyan government to raise the quality of the teaching of mathematics and science in primary and secondary schools through the use of cascaded training at a national, regional and district level with school-based teacher development. The teacher development programme was divided into three phases. The first phase (1998 – 2003) was entitled the Strengthening of Mathematics and Science in Secondary Education Project (SMASSE) and piloted in nine districts. In the second phase of SMASSE (2003 – 2008) the

programme was scaled up to all districts in Kenya. In the third phase (2009 – 2013), the programme was expanded to primary education under the title Strengthening of Mathematics and Science Education (SMASE) through a combination of training at national, regional and district level making use of the zonal-based TAC tutors (Haruo, I. 2012).

More recently, the United States Agency for International Development (USAID) and UK's Department for International Development (DFID) have been supporting school-based teacher development programmes focusing on literacy and numeracy including the Education for Marginalised Children in Kenya (EMACK), Primary Mathematics and Reading (PRIMR) and Tusome (meaning 'let's read' in Kiswahili) programmes (Management Systems International, 2014; Epstein, A. 2014). From 2006 until 2014, the EMACK programme was implemented in 29 districts across eight counties of Kenya in the Nairobi, Coast and North Eastern regions by the Aga Khan Foundation. It focused on enhancing equitable access and improving learning outcomes for children in primary grades one, two and three in areas historically marginalised by cultural practices and poverty such as those living in nomadic communities and informal settlements. It also focused on training headteachers in school planning and management through a whole school development approach. PRIMR ran from 2011 until 2014 and was mainly focused on schools in urban areas in Nairobi, Nakuru and Thika, with teachers receiving two weeks' face-to-face, workshop training in the teaching of literacy and numeracy, followed by cluster-based meetings and school-based observation, coaching and feedback provided by TAC tutors and master trainers. PRIMR also used video cameras to provide feedback to teachers and mobile phone technology – SMS – to facilitate communication between coaches and teachers.

The Tusome early grade literacy programme is a four-year (2014 – 2017) intervention designed to substantially improve reading skills in the first two primary grades in approximately 21,600 public primary schools and 1,000 low-cost private schools in non-

formal settlements in four cities: Nairobi, Nakuru, Kisumu and Mombasa. The project is expected to reach approximately 5.4 million Kenyan children. The Tusome programme materials provide daily activities in phonemic awareness, alphabetic principle, vocabulary, fluency, comprehension and writing. The approach to Tusome depends on school-based teacher development, where regional and national trainers provide modelling and practice opportunities for TAC tutors and instructional coaches who in turn will provide frequent and ongoing structured feedback to schools in each zone or cluster as they visit and observe teachers in the classroom. With a more gender-specific focus, the DFID launched the Girls' Education Challenge in Kenya 2012. The programme is expected to run for five years and to enable girls to have the opportunity to improve their lives through education by understanding what works and why in girls' education.

Tanzania

Tanzania, like Kenya, has made great strides in the numbers reaching the end of primary school and is doing better than many of its East-African neighbours. Between 2000 and 2007, the proportion of children completing primary school has risen from half to two-thirds. At the same time, learning outcomes have also improved with nearly 70% attaining basic levels in reading and 36% for mathematics, up from 49% and 19% respectively (SACMEQ, 2010; UNESCO, 2014). Building on the experiences of the SbTD programme in Kenya, Tanzania evaluated a pilot of a school-based professional development programme in 2012 using a 2009 baseline measure of teaching and learning and a comparison group of schools (Hardman et al., 2015).

The findings from the 2009 baseline analysis of 300 lessons from 8 districts, covering the teaching of primary English, mathematics, Kiswahili and science at standards 3 and 6, found that teacher-directed activities (explaining, question and answer, writing on the

chalkboard, reading to the class, asking pupils to read, lesson summary) took up over half (55%) of the lesson time. Individual seatwork, where pupils worked on exercises from the chalkboard or textbooks and teachers marked the exercises, accounted for 25% of the lesson time. More pupil-centred forms of learning (i.e. paired or group work, pupil demonstration) accounted for just 14 per cent of the lesson time, with paired/group work making up 6 per cent of the lesson time. Non-curricular activities (i.e. administration, no teaching activity taking place) took up a further 6 per cent of the time.

Building on the baseline findings, guidelines for the development of an in-service strategy were subsequently developed (UNICEF, 2009). They recommended the development of a systemic approach to teacher professional development. It included a national school-based model of delivery, placing teacher professional development at the school, classroom and cluster level, an overarching national framework of teacher competencies covering both initial and in-service education and training, and an agreed code of professional conduct and training for teachers overseen by a national teacher accreditation council.

Officially launched in February 2011, the Ministry of Education began piloting the new school-based professional development model in the seven district councils from a cross-section of regions in mainland Tanzania used in the baseline study with a view to implementing the strategy nationally. The 6-month, school-based professional development programme was designed to be mixed mode: a week's residential course delivered by college lecturers followed by supported self-study of modules in mathematics, English and pedagogy. The mathematics and pedagogy modules were made available to the teachers in Kiswahili.

The modules emphasised an active teaching model through the use of problem-solving and discussion activities, and the promotion of high-quality dialogue and discussion between teachers and pupils in whole class, group-based and one-to-one situations. They also demonstrated to teachers how to plan group work so that it was purposeful, well-structured

and appropriate to the learning task, including the training of pupils in how to work collaboratively and to assign roles and tasks. Teachers were expected to work through the modules in their own time, supported by weekly, school-based study groups and monthly meetings of school clusters meeting together at the council ward level led by teacher educators appointed from the district council advisory service and teacher colleges. The training was also designed so that teachers would receive coaching and observation in the classroom at least once a month from a teacher educator, inspector or headteacher trained in using as a standardised observation schedule and in mentoring teachers. By the end of 2012, 2,052 primary school teachers from 141 schools across the 7 district councils had been trained through the pilot programme.

The baseline evaluation used systematic observation and interviews with national and sub-national stakeholders including parents and pupils. Overall, the findings from the classroom observations revealed that teachers who had participated in the professional development showed significant differences in their use of the effective teaching behaviours: checking for prior knowledge, explaining material accurately and clearly, emphasising key points throughout the lesson, creating a positive classroom climate, using paired or group work, changing the classroom layout to facilitate the learning, and using a plenary to summarise, consolidate and extend the learning. Although not significant, teachers in the intervention schools were more likely to state the learning objectives of their lesson, to use a range of teaching and materials and to set homework compared to the non-trained teachers.

Teachers in the intervention group also showed significant differences in their use of open questions and asking pupils to demonstrate their understanding to the class when compared to the baseline and comparison group. They were also more likely to call on an individual pupil to answer a question rather than cue a choral answer. Similarly, teachers in the intervention schools demonstrated significant differences in their use of probing of a pupil

answer, commenting on an answer, building an answer into a subsequent question and encouraging pupils to ask questions. Overall, school-based trained teachers appeared far more dialogic in their interactions with pupils in questioning exchanges and showed significant differences in the way they related to pupils and effectively managed the class and timing of the lesson.

Stakeholder interviews revealed that the school-based professional development pilot was well received at the district and school levels and that it was having a significant impact on teaching and learning practices of the teachers who had received the school-based training. The findings also showed that working at the school and cluster levels helped ensure that teacher education was part of a broader capacity development strategy that supports all actors in the education system, including, for example, headteachers, district education officers and teacher trainers, and that it was cost-effective against other competing demands in a resource-poor environment like Tanzania.

One of the main lessons emerging from the evaluation was that school-based professional development can do much to enhance the capacity of Tanzanian primary teachers to deliver quality education. It was found that capacity building and incentives needed to be devolved down to those responsible for delivering school-based training with a clear division of roles and responsibilities between national, regional and district offices, and between headteachers, schools and teacher educators (Hardman et al., 2012; O'Sullivan, 2010). It also required a systemic approach to the alignment of policies, plans and institutional arrangements with regard to teacher education, curriculum reform and assessment practices, so that an effective school-based programme can ultimately be implemented at a national scale (Hardman et al., 2011; Tikly, 2011).

Lessons from the pilot have subsequently been incorporated into the design of a four-year school-based professional development programme entitled the Education Quality

Improvement Programme (EQUIP) launched in 2014 (Pettersson et al., 2015). The programme aims to develop literacy and numeracy teaching in seven relatively educationally disadvantaged regions in Tanzania targeting 47 districts, 4,450 schools and over 50,000 teachers and more than two million children. In addition to literacy and numeracy teaching, the programme aims to develop the leadership and management capacity of headteachers in a number of areas, including whole-school planning and the collecting of school performance data. The eventual goal of the programme is to replicate successful interventions across the whole of Tanzania.

Key Priorities for Governments and the International Donor Community

The growing body of research on effective professional development models for teachers from both high and low-income countries reviewed in this chapter provides support for the general trend in developing countries towards school-based professional development. However, developing the capacity and assessing the training needs of those charged with organising and providing the training, mentoring and coaching, such as district officers and college tutors, remains a major challenge in the effective delivery of school and cluster-based training.

As discussed throughout this chapter, teachers and teacher educators need to know the content of the relevant curricula and what teaching practices make a difference for pupils. They also need to be able to make new knowledge and skills meaningful to teachers and manageable within the practice contexts, to connect theory and practice in ways that teachers find helpful, and to develop teacher self-regulatory inquiry skills. As has been argued, it will entail engaging teachers, headteachers and teacher educators in discussions around teaching effectiveness, quality of education, and the implementation of innovative approaches for teacher training. Governments supported by the international donor community should

continue to prioritise the development of teacher educators, pedagogic advisors and inspectors as they are often overlooked in teacher professional development programmes despite the centrality of their role in delivering effective initial and in-service education and training (O'Sullivan, 2010).

While it is vital that all children and young people acquire basic skills in literacy and numeracy, they also need to be educated as responsible global citizens. Their education needs include issues such as environmental sustainability, peacebuilding and disaster risk reduction, and the development of core transferable skills such as critical thinking, communication, cooperation, problem-solving, conflict resolution, leadership and advocacy, as well as the promotion of core values such as tolerance, appreciation of diversity and civic responsibility (UNESCO, 2014). It is essential that teachers are equipped with the pedagogic skills to allow for the teaching of controversial issues and conflict-sensitive education through the use of dialogic approaches that promote teacher-student and peer-peer dialogue and discussion (Hardman et al, 2015). It is also essential for teachers to address these themes in a manner that is relevant to the children's situation and to motivates them, particularly for the most marginalised and vulnerable children from minority groups and nomadic and internally displaced communities.

There is also a need to build a more rigorous evidence base for policymakers, teacher educators and teachers about the kinds of experiences that help to build teacher capacity and bring about transformations in teaching practice and children's learning. Many of the recently launched programmes such as Tusome in Kenya and EQUIP in Tanzania will be evaluated over the next couple of years. The greater use of quasi-experimental and randomised designs with baseline and post-testing of student learning, combined with systematic observation of classroom processes, will enable both impact and process evaluations of the teacher training interventions (King, 2014). It will help build a more robust evidence base for answering

outstanding questions about the most effective approaches to teacher development. It will also help assess their cost-effectiveness against other approaches to teacher education in resource-poor environments.

Such programme evaluations combining both quantitative and qualitative data will help in the identification of promising variable and finding out 'what works, in what contexts and why' by investigating the differences between learning outcomes in schools where teachers have been trained in more dialogic approaches to help build reciprocity and student engagement compared to similar schools where teachers have not had this very directed training. They will also enable the development of international benchmarks against which it can to evaluate and compare the status of professional development within and across countries. Longitudinal studies investigating the scale-up of national reforms to teacher education will also help build a rigorous evidence base for policymakers on the sustainability, efficiency and cost-effectiveness of field-based approaches compared to other forms of professional development.

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